Marked up version of the Specification changes

Col. 1, lines 9-15

U.S. Pat. No. 5,229,588 to Detwiler et al. discloses a dual aperture optical scanner which includes horizontal and vertical apertures. The scanning light beams from a single laser diode pass through these apertures to provide coverage for the bottom and [up to four] sides of a scanned item [: the side facing the vertical aperture (front), the side facing the horizontal aperture (bottom), and the left and right sides].

Col. 1, lines 16-20

While this scanner requires much less item orientation than a single aperture scanner, it is not capable of scanning the top [and rear sides] of [scanning] items. Therefore, it would be desirable to provide an optical scanner which is capable of scanning the top, bottom and sides [as many as five sides] of a typical merchandise item using an increased number of scan lines.

Marked up version of the Claim changes

39.(Amended) An optical scanner comprising:

a housing having a substantially vertical surface containing a first aperture and a substantially horizontal surface containing a second aperture;

a single laser which produces a laser beam within the housing;

a plurality of groups of pattern mirrors;

a polygon spinner having mirrored facets receiving the laser beam and rotating to reflect the laser beam in a plurality of directions as the spinner rotates to cause the beam to strike at least certain of the pattern mirrors to produce a plurality of scanning beams including a first group of scanning beams, a second group of scanning beams, and a third group of scanning beams;

a first group of pattern mirrors for reflecting the first group of scanning beams through the first aperture to produce a first scan pattern consisting of a plurality of intersecting scan lines and for reflecting the second group of scanning beams through the first aperture to produce a second scan pattern consisting of a plurality of intersecting scan lines; and

a second group of pattern mirrors for reflecting the third group of scanning beams through the second aperture to produce a third scan pattern consisting of a plurality of intersecting scan lines;

wherein [each facet] multiple facets of the polygon spinner [directs] direct the laser beam alternatingly multiple times, during each rotation of the polygon spinner, to at least one pattern mirror of the first group and then to at least one pattern mirror of the second group, to reflect the laser beam alternatingly through the first and second apertures multiple times as the polygon spinner rotates a single rotation.

43.(Amended) An optical scanner comprising:

a housing having a substantially vertical surface containing a first aperture and a substantially horizontal surface containing a second aperture;

a single laser which produces a laser beam within the housing;

a plurality of groups of pattern mirrors;

a polygon spinner having mirrored facets for reflecting the laser beam in a plurality of directions as the spinner rotates to produce a plurality of scanning beams including a first group of scanning beams, a second group of scanning beams, and a third group of scanning beams; and

a first group of pattern mirrors including a first, second and third subsets of pattern mirrors for reflecting the first group of scanning beams through the first aperture to produce a first scan pattern consisting of a plurality of intersecting scan lines,

a second group of pattern mirrors including a first, second and third subsets of pattern mirrors reflecting the second group of scanning beams through the first aperture to produce a second scan pattern consisting of a plurality of intersecting scan lines, each of the subsets of the second group having multiple mirrors; and

a third group of pattern mirrors for reflecting the third group of scanning beams through the second aperture to produce a third scan pattern consisting of a plurality of intersecting scan lines;

the first group of scanning beams reflecting off the first subset of pattern mirrors of the first group to the second subset thereof, then reflecting off said second subset to the third subset thereof, and then off said third subset out the first aperture,

the second group of scanning beams reflecting off the first subset of pattern mirrors of the first group to the second subset thereof, then reflecting off said second subset

to the third subset thereof, and then off said third subset out the first aperture,

at least one of the mirrors of the first group of pattern mirrors being positioned adjacent the first aperture to reflect certain of the first group of scanning beams outwardly through the first aperture to scan the side of an article,

at least one of the [mirror] mirrors of the [first] second group of pattern mirrors being positioned adjacent the first aperture and angled to reflect certain of the first group of scanning beams outwardly and laterally through the first aperture toward the [front] leading side of the article, and at least one positioned adjacent the first aperture and angled to reflect certain of the first group of scanning beams outward and laterally through the first aperture to scan the [rear] trailing side of the article, and

at least one of the mirrors of the first group of pattern mirrors being positioned adjacent the first aperture and angled to reflect certain of the first group of scanning beams downwardly and outwardly through the first aperture to scan the top of an article.

46.(Amended) A method of scanning an item having a bar code from multiple directions, comprising the steps of

generating laser light;

providing a single multi-faceted mirrored polygon in a path of said laser light;

rotating the mirror polygon and directing the laser light at the polygon, as it is rotating, to produce a single laser beam reflected off each facet of the polygon;

generating a first group of scanning beams, a second group of scanning beams, and a third group of scanning beams by reflecting said laser light off said mirror polygon and then reflecting the laser [light] beam off groups of pattern mirrors;

generating the first group of scanning beams comprises directing the laser beam to a first set of pattern mirrors, reflecting the beam from those mirrors to a second set of pattern mirrors and reflecting the beam from those mirrors to at least one additional pattern mirror;

directing said first group of scanning beams from said at least one additional mirror through a first transparent member oriented in a first plane to scan a surface of the item from one orthogonal direction to scan at least the top of an item;

generating the second plurality of scanning beams comprises directing the laser beam to a third set of pattern mirrors, reflecting the beam from those mirrors to a fourth

set of pattern mirrors and reflecting the beam from those mirrors to a fifth set of pattern mirrors;

directing said second group of scanning beams from at least one mirror of said fifth set of mirrors directly outwardly through the first transparent member oriented in the first plane to scan one side of the item and from further mirrors of said fifth set of mirrors diagonally outwardly through the first transparent member oriented in the first plane to scan the item from a diagonal direction to scan the [front] leading and [rear] trailing sides of the item; and

generating the third plurality of scanning beams comprises directing the single laser beam to a sixth set of pattern mirrors, reflecting the beam from those mirrors to a seventh set of pattern mirrors and reflecting the beam from the mirrors of the seventh set,

directing said third group of scanning beams from said seventh set of mirrors through a second transparent member oriented in a second plane orthogonal to said first plane to scan the item from another orthogonal direction to scan at least the bottom of the item.

47.(Amended) A method of scanning as in Claim 46 wherein

the first group of scanning beams is directed through the first transparent window in an outwardly and downwardly direction to scan the top of an item, and

the second group of scanning beams is directed through the first transparent window in at least a diagonally rearward direction and a diagonally forward direction to scan the [front] leading and [rear] trailing sides of an item.

48.(Amended) A method of scanning as in claim 47 wherein

certain of the beams of the second group are directed through the first transparent window in a diagonally rearward direction to scan the [front] leading side of an item, other beams of the second group are directed through the first transparent window in a diagonally forward direction to scan the [back] trailing side of an item and other beams of the second group are directed outwardly through the first transparent window in a generally lateral direction to scan the side of the item.

53.(Amended) A method of scanning as in Claim 52 wherein

the first group of scanning beams is directed through the first transparent window in an outwardly and downwardly direction to scan the top of an item, and

the second group of scanning beams is directed through the first transparent window in a diagonally rearward direction to scan the [front] leading side of an item.

54.(Amended) A method of scanning as in claim 53 wherein

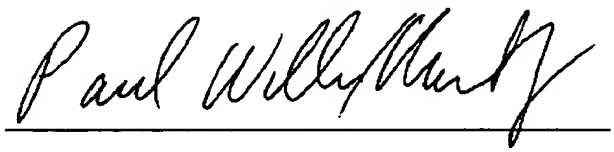
certain of the beams of the second group are directed through the first transparent window in a diagonally rearward direction to scan the [front] leading side of an item, and other beams of the second group are directed through the first transparent window in a diagonally forward direction to scan the [back] trailing side of an item.

COMMENTS

This will advise the Examiner that patent 5,684,289, on which this reissue application is based, is presently involved in a two-party interference proceeding entitled Detwiler v. Bobba Interference No. 104,631. The interference involves claims 1 to 21 and 33 to 35 of the '289 patent.

The Bobba application in this interference is a continuation of Bobba U.S. patent 5,475,207. One of the issues that has been raised in the interference is the validity of some or all of the '289 patent claims in view of the Bobba '207 patent and a Spectra Physics "Magellan" bar code scanner that is very similar to the scanner shown in Fig. 21 of the Bobba '207 patent.

Respectfully submitted,



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